Sawasaki et al. Application No. 09/759,424 Filed January 12, 2001

### IN THE CLAIMS:

Please amend claims 61 and 67-68 as follows:

1. (Previously Presented) A liquid crystal display device in which vertically aligned liquid crystal is sealed between a pair of substrates, comprising:

cell gap adjusting spacers formed on at least one of the pair of substrates, for maintaining a cell gap constant; and

domain defining projections formed on a substrate side, to which the spacers are formed, with same material as the spacers by same steps to have a height lower than the spacers,

wherein directly adjacent terminal edges of color filters are covered with the cell gap adjusting spacers.

# 2-7. (Cancelled)

8. (Previously Presented) A color filter substrate for a liquid crystal display device, comprising:

a substrate;

a plurality of color filters formed on the substrate to exhibit a plurality of colors;

a common electrode formed on the color filters;

cell gap adjusting spacers formed on the common electrode; and

domain defining projections formed on the common electrode with same material as the cell gap adjusting spacers by same steps to have a height lower than the cell gap adjusting spacers.

wherein directly adjacent terminal edges of color filters are covered with the cell gap adjusting spacers.

## 9-22. (Cancelled)

23. (Previously Presented) A liquid crystal display device in which liquid crystal is sealed between a pair of substrates,

wherein first spacers for deciding a cell gap between the substrates in a normal state and second spacers having a height lower than the first spacers are provided between the pair of substrates, and

wherein the first spacers are formed of a material which displaces easily in a small load range and the second spacers are formed of a material which does not displace easily in a large load range.

## 24-31. (Cancelled)

32. (Original) A liquid crystal display device, comprising:

a pair of substrates;

a plurality of spacers interposed between the pair of substrates to form a clearance between the pair of substrates; and

liquid crystal sealed between the pair of substrates;

wherein the spacers are formed to satisfy a following inequality,

$$x/d > (1/q_{60}-1/q_{-20})/(1/q_{60})$$

where a distribution density of the spacers is n (cm<sup>-2</sup>), an amount of displacement when a force of 9.8/n (N) is applied to one spacer is x, an average distance between the pair of substrates is d, a density of the liquid crystal at 60 °C is  $q_{60}$  (g/cm<sup>3</sup>), and the density of the liquid crystal at -20 °C is  $q_{-20}$  (g/cm<sup>3</sup>).

33. (Original) A liquid crystal display device, comprising: a pair of substrates;

a plurality of spacers interposed between the pair of substrates to form a clearance between the pair of substrates; and

liquid crystal sealed between the pair of substrates;

wherein the spacers are formed to satisfy a following inequality,

$$x/d > 2 X(1/q_{60}-1/q_{20})/(1/q_{60})$$

where a distribution density of the spacers is n (cm<sup>-2</sup>), an amount of displacement when a force of 9.8/n (N) is applied to one spacer is x, an average distance between the pair of substrates is d, a density of the liquid crystal at 60 °C is  $q_{60}$  (g/cm<sup>3</sup>), and the density of the liquid crystal at 20 °C is  $q_{20}$  (g/cm<sup>3</sup>).

34. (Previously Presented) A liquid crystal display device including a TFT substrate having thin film transistors thereon, a CF substrate having color filters for a plurality of colors, and liquid crystal sealed between the TFT substrate and the CF substrate,

the TFT substrate comprising:

a transparent substrate;

the thin film transistors formed on the transparent substrate;

an insulating final protection film for covering at least the thin film transistors; and

pixels electrodes connected electrically to the thin film transistors at portions, from which the final protection film is removed, and extended onto pixel regions,

wherein the pixel regions include both first pixel regions, in which the final protection film is interposed between the pixel electrodes and the transparent substrate, and second pixel regions, in which the final protection film is not interposed between the pixel electrodes and the transparent substrate.

35. (Original) A liquid crystal display device according to claim 34, wherein a thickness of the final protection film interposed on the pixel regions is set differently according to colors of the pixels.

- 36. (Original) A liquid crystal display device according to claim 34, wherein the final protection film is formed of insulating inorganic material.
- 37. (Original) A liquid crystal display device according to claim 34, wherein the final protection film is formed of insulating organic material.
- 38. (Previously Presented) A liquid crystal display device including a TFT substrate having thin film transistors thereon, a CF substrate having color filters for a plurality of colors, and liquid crystal sealed between the TFT substrate and the CF substrate,

the TFT substrate comprising:

a transparent substrate;

the thin film transistors formed on the transparent substrate;

an insulating final protection film for covering at least the thin film transistors; and

pixels electrodes connected electrically to the thin film transistors at portions, from which the final protection film is removed, and extended onto pixel regions,

wherein the pixel regions include both first pixel regions and second pixel regions, and a thickness of the final protection film is different in between the first pixel regions and the second pixel regions.

- 39. (Original) A liquid crystal display device according to claim 38, wherein a thickness of the final protection film interposed on the pixel regions is set differently according to colors of the pixels.
- 40. (Original) A liquid crystal display device according to claim 38, wherein the final protection film is formed of insulating inorganic material.
- 41. (Original) A liquid crystal display device according to claim 38, wherein the final protection film is formed of insulating organic material.

## 42-53. (Cancelled)

54. (Withdrawn) A liquid crystal display device in which vertically aligned liquid crystal is sealed between a pair of substrates, comprising:

cell gap adjusting spacers formed on at least one of the pair of substrates, for maintaining a cell gap constant; and

domain defining projections formed on a substrate side, to which the spacers are formed, with same material as the spacers by same steps to have a height lower than the spacers,

wherein each of cell gap adjusting spacers is formed in an area of one color filter.

55. (Withdrawn) A color filter substrate for a liquid crystal display device, comprising:

a substrate;

a plurality of color filters formed on the substrate to exhibit a plurality of colors;

a common electrode formed on the color filters;

cell gap adjusting spacers formed on the common electrode; and

domain defining projections formed on the common electrode with a same material as the cell gap adjusting spacers by same steps to have a height lower than the cell gap adjusting spacers,

wherein each of cell gap adjusting spacers is formed in an area of one color filter.

### 56. (Cancelled)

57. (Previously Presented) A liquid crystal display device in which liquid crystal is sealed between a pair of substrates,

wherein first spacers for deciding a cell gap between the substrates in a normal state and second spacers having a height lower than the first spacers are provided between the pair of substrates, and

wherein a density of the first spacers is higher than the rate of six pixel to one and a density of the second spacers is lower than the rate of twelve pixels to one.

### 58. (Cancelled)

59. (Previously Presented) A liquid crystal display device in which liquid crystal is sealed between a pair of substrates,

wherein first spacers for deciding a cell gap between the substrates in a normal state and second spacers having a height lower than the first spacers are provided between the pair of substrates,

wherein a difference in height between the first spacers and the second spacers is less than the height of the lower spacers, and

wherein the difference in height between the first spacers and the second spacers is about 0.4  $\mu$ m.

60. (Previously Presented) A liquid crystal display device in which liquid crystal is sealed between a pair of substrates,

wherein first spacers for deciding a cell gap between the substrates in a normal state and second spacers having a height lower than the first spacers are provided between the pair of substrates, and

further comprising projections having a height lower than the second spacers and dividing alignment of a liquid crystal.

61. (Currently Amended) A liquid crystal display device in which liquid crystal is sealed between a pair of substrates,

wherein first spacers for deciding a cell gap between the substrates in a normal state and second spacers, which are separate from the first spacers seen perpendicular to a planar direction of the substrates, having a height lower than the first spacers are provided between the pair of substrates, and

wherein the first spacers and the second spacers are formed over a black matrix formed on one of the pair of the substrates.

### 62. (Cancelled)

63. (Previously Presented) A color filter substrate for a liquid crystal display device, comprising:

a substrate;

first spacers formed above one surface of the substrate; and

second spacers formed above the surface, and having a height lower than the first spacers,

wherein a density of the first spacers is higher than a rate of six pixels to one and a density of the second spacers is lower than a rate of twelve pixels to one.

# 64. (Cancelled)

65. (Previously Presented) A color filter substrate for a liquid crystal display device, comprising:

a substrate;

first spacers formed above one surface of the substrate; and

second spacers formed above the surface, and having a height lower than the first spacers,

wherein the difference in height between the first spacers and the second spacers is about  $0.4~\mu m$ .

66. (Previously Presented) A color filter substrate for a liquid crystal display device, comprising:

a substrate;

first spacers formed above one surface of the substrate;

second spacers formed above the surface, and having a height lower than the first spacers; and

projections having a height lower than the second spacers and dividing alignment of a liquid crystal.

67. (Currently Amended) A color filter substrate for a liquid crystal display device, comprising:

a substrate;

first spacers formed above one surface of the substrate; and

second spacers formed above the surface, <u>separated from the first spacers</u>
<u>seen perpendicular to a planar direction of the substrate</u>, and having a height lower than the first spacers,

wherein the first spacers and the second spacers are formed over a black matrix formed on the substrate.

68. (Currently Amended) A color filter substrate for liquid crystal display device according to claim 67, comprising:

#### a substrate;

first spacers formed above one surface of the substrate; and
second spacers formed above the surface, and having a height lower than
the first spacers,

wherein the first spacers and the second spacers are formed over a black matrix formed on the substrate, and

wherein the first spacers and the second spacers are formed on a common electrode, and the first spacers are formed by laminating a first resin film and a second resin film, and second spacers are formed of any one of the first resin film and the second resin film.

69. (Previously Presented) A liquid crystal display device according to claim 61, wherein the first spacers and the second spacers are formed on a common electrode, and the first spacers are formed by laminating a first resin film and a second

resin film, and second spacers are formed of any one of the first resin film and the second resin film.